

RemarksApplicants' election

In response to the examiner's restriction requirement of December 26, 2002, applicants hereby elect as the ultimate species, *with traverse*, the copolymers of propylene with **ethylene**. The claims which read upon the elected species 1, 2 and 4-6.

Traversal of restriction requirement

There is unity of invention within the meaning of 37 CFR 1.499 and PCT Rule 13. Cf. MPEP 1893.03(d) because of the commonality of the subject matter in terms of the art area involved.

Of course, applicants reserve the right to file divisions with respect any subject matter withdrawn from consideration under the provisions discussed in *Studiengesellschaft Kohle mbH v. Northern Petrochemical Co.*, 784 F.2d 351, 355, 228 USPQ 837, 840 (Fed. Cir.), cert. dismissed 478 U.S. 1028 (1986).

The examiner's first Office action on the merits is awaited.

To the extent necessary, applicant(s) petition for an Extension of Time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees to Deposit Account No. 11-0345. Please credit any excess fees to such deposit account.

APPLEYARD et al.

Serial No. 10/043,115

Respectfully submitted,

KEIL & WEINKAUF

A handwritten signature in black ink, appearing to read "Norman G. Torchin".

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COPY OF ALL ELECTED CLAIMS

1. A process for producing biaxially stretched polypropylene copolymer films in which random propylene copolymers with other 1-alkenes having up to 10 carbon atoms, whose content of comonomers is in the range from 0.7 to 1.4% by weight if the only comonomer present in the propylene copolymers is ethylene, or whose content of comonomers is in the range from 0.7 to 3.0% by weight if at least one C₄-C₁₀-1-alkene is present as comonomer, and whose cold-xylene-soluble fraction is from 1.0 to 2.5% by weight if ethylene is present as a comonomer in the propylene copolymers, or whose cold-xylene-soluble fraction is from 0.75 to 2.0% by weight if the only comonomers present are C₄-C₁₀-1-alkenes, are melt extruded through a die to give a film, the extruded film is cooled to from 100 to 20°C so that it solidifies, the solidified film is stretched in the longitudinal direction at from 80 to 150°C with a stretching ratio of at least 4:1 and in the transverse direction at from 120 to 170°C with a stretching ratio of at least 5:1.
2. A process as claimed in claim 1 in which said random propylene copolymers comprise exclusively ethylene as comonomer.

4. A process as claimed in claim 1 in which said random propylene copolymers have a Q_5 value greater than or equal to 200, where Q_5 is given by

$$\mu(T_m)$$

$$Q_5 = 1000 \times \frac{\mu(T_m)}{\mu(T_m - 5K)}$$

and

$\mu(T_m)$ is the elongational viscosity of the random propylene copolymer at the lowest temperature at which the copolymer is fully molten, and $\mu(T_m - 5K)$ is the elongational viscosity at a temperature which is lower by 5K, and the elongational viscosities are determined 2 seconds after stretching begins at a constant strain rate (Hencky) strain rate ϵ of 0.2 s^{-1} .

5. A process as claimed in claim 1 in which said random propylene copolymers have a PI (Processability Index) of greater than 18, where the PI is determined from the formula

$$PI = \ln(SH + 1) \cdot (\ln Q_3 + \ln Q_5),$$

Q_5 is given by

$$Q_5 = 1000 \times \frac{\mu(T_m)}{\mu(T_m - 5K)}$$

and Q_3 is given by

$$Q_3 = 1000 \times \frac{\mu(T_m)}{\mu(T_m - 3K)},$$

$\mu(T_m)$ is the elongational viscosity at the lowest temperature at which the copolymer is fully molten, $\mu(T_m-5K)$ is the elongational viscosity at a temperature which is lower by 5K and $\mu(T_m-3K)$ is the elongational viscosity at a temperature which is lower by 3K, and the elongational viscosities are determined 2 seconds after stretching begins at a constant strain rate (Hencky strain rate) ϵ of 0.2 s^{-1} , and the factor SH (Strain Hardening) is the ratio of the maximum gradient of the curve of elongational viscosity plotted against time on a double logarithmic scale for temperatures less than T_m-5K to the gradient of the elongational viscosity curve 1 second after stretching begins at a constant Hencky strain rate ϵ of 0.2 s^{-1} at a temperature of T_m-5K .

6. A process as claimed in claim 1, in which said random propylene copolymers are produced by polymerization in the gas phase at from 50 to 100°C and at a pressure of 15 to 40 bar in the presence of a Ziegler-Natta catalyst system comprising
 - a) a titanium-containing solid component comprising at least one halogen-containing magnesium compound and an electron donor,
 - b) an aluminum compound and
 - c) at least one other electron-donor compound,and the ratio of the partial pressures of propylene and of the comonomers is adjusted to from 400:1 to 15:1 and the molar ratio of the aluminum compound b) and the other electron-donor compound c) is adjusted to from 20:1 to 2:1.